Questionnaire Design

The survey questionnaire was designed to obtain the most important information for the development of the travel model. It was important to limit the length of the questionnaire so that the interview should average between 60 and 90 seconds. Several draft questionnaires were produced and discussed at length by the Steering Committee. The draft questions approved by the Steering Committee were incorporated in the questionnaire and used in the Survey Pretest. Some modifications were made, resulting from the pretest.

Figure 3 shows the survey questionnaire in its final format. Each form was able to accommodate three trips. The following information was provided for on the questionnaire:

- Questionnaire No. (pre-printed)
- Station No.
- Location
- Day of Week
- Date
- Hour Beginning
- Interviewer (name)

The above information was common to all trips on that interview form. The following information was unique to each trip being surveyed:

- Number (this was a pre-printed number 1, 2, or 3 indicating the trip number on the questionnaire sheet)
- Vehicle Type - The following vehicle types were used:
  - Automobiles, pick-ups, and panel vans
  - Four-tired single-unit trucks
  - Six-or-more tired single-unit trucks
  - Six-tired semitrailers or combinations

- Number in vehicle (refers to the number of occupants in vehicle)

- Where are you coming from now? (If MN or WI ask city.)

  Codes were provided for Minnesota, Wisconsin, Iowa, North Dakota, South Dakota, Illinois, and other states combined. These was made to record the name of the city. This information was later data entered but was not coded.

- Was your main purpose there . . . ?

  - Home
  - Work
  - Shopping
  - Other

  The object of this question was to obtain the purpose at the starting end of the trip.

TWIN CITIES METRO AREA TRAVEL BEHAVIOR INVENTORY - EXTERNAL TRIP SURVEY

Questionnaire Number: 03006

Station Number:____ Location:_____ Day: 1 MON 2 TUES 3 WED 4 THURS 5 FRI Date:___/___

Hour Begin:_____ 1. A.M. 2. P.M. Interviewer _____

No.	Vehicle Type	No. in Vehicle	Where are you coming from now? (IF MN OR WI ASK CITY)	Was your main purpose there...	Will this trip end in the Twin Cities 7 county metro area?	(IF YES OR DON'T KNOW:) What is the exact address in the Twin Cities?	(IF NO:) In what city and state will it end?	Will your main purpose there be...	COMMERCIAL VEHICLES What load are you carrying?	Do you live in the Twin Cities metro area?
1	Auto 1 4 TSU 2 6+ TSU 3 6+ TST 4		MN ..... 1 WI ..... 2 IA ..... 3 ND ..... 4 SD ..... 5 IL ..... 6 OTHER ..... 7 CITY:	Home.....1 Work.....2 Shopping..3 Other.....4	Yes.....1 No.....2 Don't Know...3	No. _____ Street: Intersecting street or building name: CITY:	CITY: ND ..... 4 MN ... 1 SD ..... 5 WI ... 2 IL ..... 6 IA ... 3 OTHER .. 7 By what route do you plan to leave?	Home.....1 Work.....2 Shopping..3 Other.....4	Empty.....1 Grain/Oil-seed....2 Food Products.....3 Oil/Chemicals,etc.4 Bulk(fertilizer, sand).....5 Goods(non-food)...6 Autos.....7 Livestock.....8 Other.....9	Yes.....1 No.....2 Don't Know Anoka.....1 Carver.....1 Dakota.....1 Hennepin.....1 Ramsey.....1 Scott.....1 Washington...1 Other.....2
2	Auto 1 4 TSU 2 6+ TSU 3 6+ TST 4		MN ..... 1 WI ..... 2 IA ..... 3 ND ..... 4 SD ..... 5 IL ..... 6 OTHER ..... 7 CITY:	Home.....1 Work.....2 Shopping..3 Other.....4	Yes.....1 No.....2 Don't Know...3	No. _____ Street: Intersecting street or building name: CITY:	CITY: ND ..... 4 MN ... 1 SD ..... 5 WI ... 2 IL ..... 6 IA ... 3 OTHER .. 7 By what route do you plan to leave?	Home.....1 Work.....2 Shopping..3 Other.....4	Empty.....1 Grain/Oil-seed....2 Food Products.....3 Oil/Chemicals,etc.4 Bulk(fertilizer, sand).....5 Goods(non-food)...6 Autos.....7 Livestock.....8 Other.....9	Yes.....1 No.....2 Don't Know Anoka.....1 Carver.....1 Dakota.....1 Hennepin.....1 Ramsey.....1 Scott.....1 Washington...1 Other.....2
3	Auto 1 4 TSU 2 6+ TSU 3 6+ TST 4		MN ..... 1 WI ..... 2 IA ..... 3 ND ..... 4 SD ..... 5 IL ..... 6 OTHER ..... 7 CITY:	Home.....1 Work.....2 Shopping..3 Other.....4	Yes.....1 No.....2 Don't Know...3	No. _____ Street: Intersecting street or building name: CITY:	CITY: ND ..... 4 MN ... 1 SD ..... 5 WI ... 2 IL ..... 6 IA ... 3 OTHER .. 7 By what route do you plan to leave?	Home.....1 Work.....2 Shopping..3 Other.....4	Empty.....1 Grain/Oil-seed....2 Food Products.....3 Oil/Chemicals,etc.4 Bulk(fertilizer, sand).....5 Goods(non-food)...6 Autos.....7 Livestock.....8 Other.....9	Yes.....1 No.....2 Don't Know Anoka.....1 Carver.....1 Dakota.....1 Hennepin.....1 Ramsey.....1 Scott.....1 Washington...1 Other.....2

Survey Questionnaire

Barton-Aschman Associates, Inc.

Figure 3

- Will this trip end in the Twin Cities seven-county metro area?

  Provision was made for "yes," "no," and "do not know."

- If ("yes" or "do not know"): What is the exact address in the Twin Cities?

  The object of this question was to obtain the address in sufficient detail for geocoding. Desired information was the number and street. If this could not be given, the nearest intersecting street, or at least a building name was requested. The city was also required.

- If "no": In what city and state will it end?

  If the destination was not actually in the Twin Cities area, then the exact address was not required. The destination would be coded according to the route by which it crossed the border of the study area when leaving the study area. The following information was then requested: city, and state. Provision was made for coding the following states: Minnesota, Wisconsin, Iowa, North Dakota, South Dakota, Illinois, and all other states combined.

- By what route do you plan to leave?

  This question would then provide the route, for which an external zone code could be attached.

- Will your main purpose there be . . . ?

  - Home
  - Work
  - Shopping
  - Other

  The object of this question was to obtain the trip purpose at the destination end.

- Commercial vehicles: What load are you carrying?

  Provision was made for the following classes of load:

  - Empty
  - Grain/oil seed
  - Crude products
  - Oil/chemicals, etc.
  - Bulk (fertilizer, sand)
  - Goods (non-food)
  - Autos
  - Livestock
  - Other

- Do you live in the Twin Cities metro area?

  It was necessary to determine whether the drivers surveyed were residents of the Twin Cities or not. Those who were residents of the Twin City would have to have a special code attached to their records to avoid double counting information. It must be remembered that the home interview survey and the workplace survey were already recording trips of persons who were residents of the study area and who might have made trips outside of the area.

  Because many people would not know what constituted the Twin Cities metro area, a special routine was employed. If they were not sure, they were asked what county they lived in. The seven counties constituting the metropolitan area were preprinted and coded on the form. If any of those were given as the answer, then that person was deemed to be living in the metro area. If any other county was given they were deemed to be residents outside the metro area.

Traffic Control Plans

Prior to the survey, each survey location was visited and observations made of the traffic and roadway conditions. Taking into account the volume of traffic in each direction, together with the available road cross-section and approach speed, a traffic control plan was designed for the location.

Principal features aimed at, in developing the plans were:

- Provision of a lane or lanes for bypass traffic (that is, traffic that is not being interviewed).
- Provision of an "island" demarcated by road cones for the interviewers.
- Provision of a lane for the sampled traffic to stop and be interviewed.
- Adequate advance signing to warn traffic of the survey ahead and to warn drivers of the lane closure to be encountered ahead.
- A sufficiently long taper, formed by cones, to gradually move traffic out of the closed lane into the bypass lane or lanes.
- Adequate site distance for approaching drivers to see the traffic control officer, who would be diverting the vehicles out of the bypass road for interviewing.
- Adequate site distance for drivers to see the queue of vehicles that would form as traffic slowed down in the interview area.

Three typical types of plan were developed for conditions being met frequently.